Improving Data Quality in CEIDARS

Vijay Bhargava

Emission Inventory Workshop

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Improving Data Quality in CEIDARS

- What "quality data" means
- Why we need quality data
- Consequences of poor quality data
- QA/QC in CEIDARS
- DEMO on QA reports in CEIDARS

What "Quality Data" Means

- Accurate
- Consistent
- Timely
- Fulfills end user needs

Why We Need Quality Data

- Visibility of data
- Rule Development
- Air Quality Planning
- Photochemical Modeling
- Fee Programs
- NEI

Visibility Of Data

- **World Wide Web (ARB, EPA, Env. Groups)**
  - District level
  - Facility level
- **Data Request**
  - Almanac
  - Gov. agencies, public, consultants, industry
- **Health Risk Assessments**

Rule Development

- Prioritize categories
- Identify existing controls
- Study impacts of proposed measures
- Assess impacts of implemented rules

Air Quality Planning

- **Attainment plans**
  - Ozone, PM
- **Progress demonstrations**
  - Rate of progress analysis
  - Milestone compliance
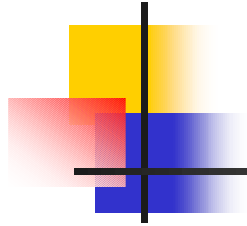- **Regional haze rule**

Photochemical modeling

- Model validation
- Special studies
  - SCOS, CCOS
- Weekday / weekend ozone effects

Fee Programs

- District fees
- California Clean Air Act fees

National Emission Inventory

- **Yearly Submittal**
- **Emission Release Points**
- **Required Fields**
- **Merged with other US EPA Environmental Data**
- **Posted to US EPA Envirofacts**
  - www.epa.gov/enviro

Consequences of Poor Quality Data

- Incorrect SCC/SIC assignments
- Missing /incorrect Temporal Data
- Missing/incorrect UTM/stack data
- Missing /incorrect control equipment data
- Missing speciation data

Incorrect SCC/SIC Assignments

- Example:
  - Metal manufacturer
    - Facility sic 2514
  - With wood parts coating operation

Incorrect SCC/SIC Assignments

- Create errors in:
  - Categorization
  - Reconciliation
  - Chemical speciation
  - Assignment of control and growth profiles
- Which impacts
  - Photochemical modeling
  - Control strategy development
  - Attainment plans

Incorrect SCC/SIC Assignments

- **Solution:**
  - Use valid combination
    - Process SCC: 40201901 wood furniture coating
    - Process SIC: 2511 wood furniture manufacturing
  - Facility SIC describes overall activity
    - Facility SIC: metal furniture manufacturing

Missing/Incorrect Temporal Data

- ## Example:
  - ### Hours/day, days/week, weeks/year, and monthly activity fields

- ## Create errors in:
  - ### Temporal distribution of emissions

Missing/Incorrect Temporal Data

- ## Which Impacts
  - Seasonal planning inventories
  - Photochemical modeling
  - Weekday/ weekend studies
- ## Solution:
  - provide temporal data for each process

Missing/Incorrect UTM/ stack data

- Example:
  - Facility UTM and stack UTM fields
  - Stack height, diameter fields
  - Stack gas flow rate and temperature fields
- Creates errors in:
  - Geographical location of emissions
  - Calculation of "effective plume height"

Missing/Incorrect UTM/ stack data

- **Which impact:**
  - Photochemical modeling
    - Ozone studies
    - Model validation
  - Health risk assessments
- **Solution:**
  - Provide UTM data for each facility and stack
  - Provide stack physical parameters

Missing/ Incorrect Control Equipment data

- Example:
  - Primary and secondary control device fields
  - Control efficiency field
- Creates errors in:
  - Controlled vs. uncontrolled emissions
  - Identified control equipment used

Missing/ Incorrect Control Equipment data

- ## Which impact:
  - Control strategy planning
  - Rule development
- ## Solution:
  - Provide control device codes and/or control efficiency for each controlled pollutants
  - Also provide uncontrolled and uncontrolled emission factors

Quality Assurance Reports

- QAFCC- Facility records with no emission data
- QAPRO - Process records with no emission data
- QASTACK - Stack records with no emissions data
- QADEV - Device records with no emissions data
- QAKEYS - KEY data
- QAKEMS - codes and emissions
- QATEMP - UTM, temporal and monthly activity
- QASTACK- stack parameters

Quality Assurance Reports

- QADP - device and process data
- QACNTL - control device and emission factors
- Reconciliation - point and area source data